REMARKS

Claims 1-17 are pending in the present application. Claims 7-17 were withdrawn. Claims 1, 4 and 6 are being amended herein. Claim 5 is being canceled. Therefore, claims 1-4 and 6 remain for consideration.

The Examiner states that the present application does not contain an abstract of the disclosure as required by 37 CFR § 1.72(b), and that therefore an abstract on a separate sheet is required. It is not understood why an abstract is being required since our records indicate that an abstract was filed. Nevertheless, Applicant is resubmitting the abstract.

The specification is objected to as allegedly failing to provide proper antecedent basis for the claimed subject matter. The Examiner believes that it is unclear in the specification where "M=>1", "k=>1" and "m+k=>3" are found. The specification is being amended to clarify where "$M \geq 1$", "$k \geq 1$" and "$m+k \geq 3$" are found. Accordingly, it is respectfully submitted that the objection to the specification is overcome.

Claims 1-6 are rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite. With regard to claims 1 and 6, the Examiner refers to the equations "m=>1", "k=>1" and "m+k=>3". The Examiner states that if both m and k are equal to 1, how can M+K be equal to or greater than 3? Moreover, with respect to claim 5, the Examiner believes that it is unclear as to what element "the preload element" refers. The rejection is traversed and reconsideration is respectfully requested.

Claim 5 is being canceled herein. The subject matter of claim 5 is being incorporated into amended claim 1. The objected to phrase "the preload element" is clarified in claim 1 in order to more clearly provide antecedent basis. It is therefore respectfully submitted that the § 112, second paragraph rejection with respect to the objected to phrase is overcome.

With respect to the equations objected to by the Examiner, the Preliminary Amendment filed with the present application amended claims 1 and 6 to clarify

that "$m \geq 1$" (m is greater than or equal to one), "$k \geq 1$" (k is greater than or equal to one), and "$m+k \geq 3$" (m plus k is greater than or equal to three). Applicant respectfully submits that the three equations are not indefinite. The three equations define the number (m) of positions where the spring member is fixed with respect to the suspension frame and the number (k) of preload elements. The first condition is that m+k always has to be greater than or equal to three. It is mentioned in the specification that "The spring member is at least at n=3 positions connected to the suspension frame."

The embodiment of Fig. 2A has k=2 preload elements (15.1) and (15.2), and the spring member is fixed at m=2 positions. That is, the equation $m+k \geq 3$ is satisfied. The other two equations set the general ranges for k and m.

In other words, m and k can only have simultaneous values such that all three equations are satisfied. Therefore, m and k cannot simultaneously have values equal to one. However, m can equal one when k is greater than or equal to two. Similarly, k can equal one when m is greater than or equal to two. Therefore the equations are not indefinite. Accordingly, for the foregoing reasons, it is respectfully submitted that remaining rejected claims 1-4 and 6 are not indefinite.

Claims 1-6 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ostaszewski (U.S. Pat. No. 5,529,277) in view of Kuklo et al. (U.S. Pat. No. 5,353,167) or Brazell et al. (U.S. Pat. No. 5,267,720) and Chaya (U.S. Pat. No. 5,268,784) or Ormond (U.S. Pat. No. 3,246,890). The rejection is traversed and reconsideration is respectfully requested, particularly in view of the clarifying amendments to the claims.

Ostaszewski is directed to a system which employs two perpendicular four-bar linkages coupled by a common plate to provide a translational-free flexible suspension having two rotational degrees of freedom about a desired point. One of the four-bar linkages is secured to a stationary "ground" structure, and the other linkage is attached to the object to be supported, such as a mirror. In one

embodiment, two links of each of the two four-bar linkages are constructed from spring steel flexure elements which are rigid in all directions except about the rotational axis. The flexure elements thus comprise revolute joints. Because the flexure elements function as spring hinges, no friction is encountered when the suspension is displaced or pivoted.

Ostaszewski does not, however, teach or suggest a suspension system, or a positioning or alignment assembly which include preload elements comprising one or more spring elements being attached to or being an integral part of the suspension frame, as is recited in independent claims 1 and 6 of the present application. The specification of the present application distinguishes fixed connections and preload connections (see page 8, line 28 to page 9, line 4). The preload elements as claimed in the present application allow for one degree of freedom of movement in the direction of the preload (see page 9, lines 10-12). Such preload elements in accordance with the present invention apply a preloading force to the spring member in order to introduce a positive stress in the active part of the spring member. The preload elements provide a stable suspension system that has one stable position even if the temperature should change.

Kuklo et al. is directed to a lens or mirror mount having adjustable constraints at two key locations to allow for "X" and "Y" tilts of the mirror only. The device uses two pair of flexures of a type such that the pivots of the mirror gimble are rigidly fixed in all planes allowing the device to have zero stacking tolerance and zero wear over time.

Apparently, Kuklo et al. is cited for allegedly showing preloaded supports (elements 4, 12 and 14). However, these elements are not preloaded elements for a flat spring member as is recited in amended independent claims 1 and 6 of the present application, but rather are flexures for providing X and Y coordinate rotation of a mirror. Indeed, there is no teaching in Kuklo et al. of a flat spring member to be preloaded. Therefore, the teaching of Kuklo et al. does not materially add to the

teaching of Ostaszewski to render independent claims 1 and 6 obvious.

Brazell et al. is directed to a structure-borne noise isolator which employs a two axis system whereby a noise generating platform is coupled to an inner frame by a first pair of diametrically positioned noise isolators. The inner frame is coupled to an outer frame by a second pair of diametrically positioned noise isolators. At least one noise isolator comprises a coil spring shrink fitted at one end to an inner housing and at the other end to a cover. The inner housing is inserted into an outer housing with a damping compound between and potted to the inner and outer housings. Additional damping compound is bonded to the base of the outer housing separating the base of the outer housing from the base of the inner housing. The cover, having damping compound bonded thereto, is coupled to the outer housing. A hub, positioned adjacent to the damping compound on the cover, is coupled to the inner housing.

Apparently, the Examiner cites Brazell et al. for allegedly showing preloaded supports. However, Brazell et al. does not teach or suggest a suspension system or assembly including a flat spring member and preloaded elements arranged with respect to the suspension frame and the spring member as is recited in independent claims 1 and 6 of the present application. Rather, Brazell et al. shows a coil spring interposed between a housing and a cover. Accordingly, the teaching of Brazell et al. does not materially add to the teaching of Ostaszewski to render independent claims 1 and 6 obvious.

Chaya is directed to a pivotable mirror device for tracking and for driving a light beam spot in the radial direction of an optical disk. The device includes a mirror holder holding a reflecting mirror pivotably supported by a thin leaf spring. A planar portion of the thin leaf spring is laid on the reflecting surface of the reflecting mirror. The thin leaf spring is constricted between the planar portion and a portion in which the thin leaf spring is attached to a thin leaf spring supporting member to thereby form a torsional portion for pivotal movement thereof. A high

attenuation member is attached to the torsional portion. The device of Chaya is a pivot suspension having a one degree freedom of movement. The flexure design includes attenuation devices that dampen movement.

Apparently, Chaya is cited for allegedly showing that it is well known in the art to make plural parts singular and vice versa with respect to a flat spring member as a matter of engineering choice of design. However, Chaya does not teach or suggest preload elements as is recited in independent claims 1 and 6 of the present application. Moreover, regardless of whether or not the Examiner's statement is true, it has been demonstrated above that Ostaszewski taken either along or in combination with Kuklo et al. or Brazell et al. does not teach or suggest a suspension system or assembly including a flat spring member and preloaded elements arranged with respect to the suspension frame and the spring member, as is recited in independent claims 1 and 6 of the present application. Accordingly, the teaching of making plural parts singular and vice versa as allegedly taught in Chaya does not materially add to the teachings of Ostaszewski taken either alone or in combination with Kuklo et al. or Brazell et al. to render independent claims 1 and 6 obvious.

Ormond is directed to universal type flexure joints in which omni-directional movements with respect to a single center point may be effected. Apparently, Ormond is also cited for allegedly showing that it is well known in the art to make plural parts singular and vice versa with respect to a flat spring member as a matter of engineering choice of design. Again, regardless of whether or not the Examiner's statement is true, it has been demonstrated above that Ostaszewski taken either along or in combination with Kuklo et al. or Brazell et al. does not teach or suggest a suspension system or assembly including a flat spring member and preloaded elements arranged with respect to the suspension frame and the spring member, as is recited in independent claims 1 and 6 of the present application. Accordingly, the teaching of making plural parts singular and vice versa as allegedly taught in Ormond does not materially add to the teachings of Ostaszewski taken either alone

or in combination with Kuklo et al. or Brazell et al. to render independent claims 1 and 6 obvious.

In sum, it has been demonstrated above that the teachings of Ostaszewski taken either alone or in combination with the teachings of Kuklo et al. or Brazell et al. and Chaya or Ormond do not render independent claims 1 and 6 obvious. Moreover, because remaining rejected claims 2-4 each ultimately depend from and thereby incorporate the limitations of claim 1, these dependent claims are not obvious for at least the reasons set forth for claim 1.

In view of the foregoing, it is respectfully submitted that claims 1-4 and 6 are in condition for allowance. All issues raised by the Examiner having been addressed, an early action to that effect is earnestly solicited.

Applicant herein petitions for a two month extension of time to file this Response. A check in the amount of $450.00 is included to cover the extension fee. No additional fees or deficiencies in fees are believed to be owed. However, authorization is hereby given to charge our Deposit Account No. 13-0235 in the event any such fees are owed.

Respectfully submitted,

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